

# PROJECT FACT SHEET

**CONTRACT TITLE:** Improved Secondary Recovery Demonstration for the Sooner Unit -- Class 1

**ID NUMBER:** DE-FC22-93BC14954

**CONTRACTOR:** Diversified Operating Corp.

**B & R CODE:** AC1010000

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**DOE PROGRAM MANAGER:**

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**DOE PROJECT MANAGER:**

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**CONTRACT PERFORMANCE PERIOD:**

10/21/1992 to 11/30/1995

**PROJECT SITE**

**CITY:** Denver

**STATE:** CO

**CITY:** Fort Morgan

**STATE:** CO

**CITY:**

**STATE:**

**PROGRAM:** Field Demonstrations

**RESEARCH AREA:** Class 1

FUNDING (1000'S)	DOE	CONTRACTOR	TOTAL
PRIOR FISCAL YRS	788	789	1,577
FISCAL YR 1996	0	0	0
FUTURE FUNDS	0	0	0
TOTAL EST'D FUNDS	788	789	1,577

**OBJECTIVE:** The Class I Project is essentially over and has demonstrated the cost-effectiveness of geologically targeted infill drilling and improved reservoir management to increase waterflood recovery of the Cretaceous Muddy "D" formation in the Denver Julesburg Basin, in northeast Colorado.

**METRICS/PERFORMANCE:**

**Products developed:** The Sooner Unit is currently producing between 400-415 bopd as of February 15, 1996. Reservoir management and the ability to individually test wells have enabled the Unit to continue to increase production from the newly drilled wells, which were drilled on seismic attribute-correlations from the Project.

**PROJECT DESCRIPTION:**

**Background:** The Cretaceous "D" Sand has good primary recovery but disappointing waterflood performance. The majority of waterflood projects have produced only about 20% of the OOIP. Several previous waterflood projects in the general vicinity of the Sooner Unit had marginal to negative incremental reserves compared to primary production extrapolations. Poor waterflood recovery is attributed to reservoir heterogeneity and poor reservoir management practices. Three-dimensional seismic had not been used in the D-J Basin for exploration or development of "D" Sand reservoirs prior to this project.

**Work to be performed:** Due to the increased performance of the Unit, DOC believes that sweep efficiencies, daily production, and ultimate oil recoveries can be further improved by instituting Gel Polymer Treatments into the primary injection wells. That program, with financial support from the BDM-Oklahoma, will begin the 1st quarter 1996. In addition, the Sooner Unit will undergo field automation, with no financial support from outside sources, beginning also in the 1st quarter 1996. The goals are to increase daily oil production, reduce water handling costs, and reduce monthly DOE by 30%. Without the increased daily performance of the Unit from the Class 1 Project, these capital expenditures would have been impossible.

In addition to the technologies to be employed on existing wells, the infill drilling schedule, for the exploitation of undeveloped area of the Unit, is one well for each quarter, beginning the second quarter of 1996. We anticipate a minimum of 5 more selected wells.

**PROJECT STATUS:**

**Current Work:** The project has completed the last of three wells which were targeted from 3-D seismic and integrated characterization studies. A final report is being prepared which documents the results of the characterization studies and improved production. Presentation to industry are being developed and scheduled for the last quarter of 1995 and first quarter of 1996.

**Scheduled Milestones:**

Complete injection survey	09/94
Drill and complete infill wells	07/95
Conduct seismic interpretation and case study workshops	07/95

**Accomplishments:** DOC believes that with the success of targeting specific infill wells, that an additional 5 wells, recovering 80,000 BO is likely. This likelihood is due to the previous success enjoyed from the integrated characterization studies that have been performed in the Class 1 Project.